# TRANSACTIONS

OF THE

# American Society of Civil Engineers.

## INDEX.

## VOLUME XLVII.

APRIL, 1902.

SUBJECT INDEX, PAGE 446.

AUTHOR INDEX, PAGE 448.

Titles of papers are in quotation marks when given with the author's name.

# VOLUME XLVII.

## SUBJECT INDEX.


**CANALS.**

"Some Important Phases of Canal Navigation, Illustrated by Recent Experiments in Germany." Elnathan Sweet. 435.

**GAUGES.**

Differential — . 71 *et seq.*

**METERS.**

"Current Meter and Weir Discharge Comparisons." Edward C. Murphy. 370. Discussion: Charles H. Miller, Rudolph Hering, Morris R. Sherrerd, L. J. Le Conte, J. B. Lippincott and E. E. Haskell, 379.

Current meter ratings. 202.

**PIEZOMETERS.**

Differential gauges. 71 *et seq.*

**PIPE.**

Cost of — laying around curves. 361 *et seq.*

Variation in diameter of — . 94 *et seq.*

**PITOT TUBES.**

Description of — and their use. 6 *et seq.*

**WATER, FLOW OF, IN OPEN CHANNELS.**

"A Proposed Solution of Some Hydraulic Problems." Charles H. Tutton. 392. Discussion: Clemens Herschel, I. P. Church and Edward C. Murphy, 410.

"Current Meter and Weir Discharge Comparisons." Edward C. Murphy. 370. Discussion: Charles H. Miller, Rudolph Hering, Morris R. Sherrerd, L. J. Le Conte, J. B. Lippincott and E. E. Haskell, 379.

**WATER, FLOW OF, IN PIPES.**

"Experiments at Detroit, Mich., on the Effect of Curvature upon the Flow of Water in Pipes." Gardner S. Williams, Clarence W. Hubbell and George H. Fenkell. 1. Discussion: E. C. Murphy, Hiram F. Mills, Irving P. Church, Charles H. Tutton, J. L. Campbell, Charles W. Sherman, D. Farrand Henry, George Y. Wisner, Edgar C. Thrupp, Rudolph Hering, James A. Seddon, J. P.

Frizell, Henry Bazin, E. Kuichling, Walter Ferris, E. Sherman Gould, H. W. Brinckerhoff, Edward S. Cole, E. E. Haskell, Wager Fisher, Robert E. Horton, W. M. White, A. V. Saph, E. W. Schoder, Arthur Adams and W. E. Wilson, 197.

**WATER, FLOW OF, OVER DAMS.**

Comparison of current meter and weir discharges. 203.

"Current Meter and Weir Discharge Comparisons." Edward C. Murphy. 370. Discussion: Charles H. Miller, Rudolph Hering, Morris R. Sherrerd, L. J. Le Conte, J. B. Lippincott and E. E. Haskell, 379.

**WATER-WORKS.**

"The — of Guantanamo, Cuba." S. D. Rockenbach. 426.

## AUTHOR INDEX.


**ADAMS, ARTHUR.**
Flow of water in pipes. 323.

**BAZIN, HENRY.**
Flow of water in pipes. 244.

**BRINCKERHOFF, H. W.**
Flow of water in pipes. 272.

**CAMPBELL, J. L.**
Flow of water in pipes. 221.

**CHURCH, IRVING P.**
Flow of water in pipes. 205.
Hydraulic problems. 415.

**COLE, EDWARD S.**
Flow of water in pipes. 275.

**FENKELL, GEORGE H.**
"Experiments at Detroit, Mich., on the Effect of Curvature upon the Flow of Water in Pipes." 1.

**FERRIS, WALTER.**
Flow of water in pipes. 268.

**FISHER, WAGER.**
Flow of water in pipes. 288.

**FRIZELL, J. P.**
Flow of water in pipes. 242.

**GOULD, E. SHERMAN.**
Flow of water in pipes. 271.

**HASKELL, E. E.**
Current meter and weir discharges. 387.
Flow of water in pipes. 283.

**HENRY, D. FARRAND.**
Flow of water in pipes. 224.

**HERING, RUDOLPH.**
Current meter and weir discharges. 380.
Flow of water in pipes. 237.

**HERSCHEL, CLEMENS,**
Hydraulic problems. 410.

**HORTON, ROBERT E.**
Flow of water in pipes. 289.

**HUBBELL, CLARENCE W.**
"Experiments at Detroit, Mich., on the Effect of Curvature upon the Flow of Water in Pipes." 1.

**KUICHLING, E.**
Flow of water in pipes. 266.
**LE CONTE, L. J.**
Current meter and weir discharges. 382.
**LIPPINCOTT, J. B.**
Current meter and weir discharges. 383.
**MILLER, CHARLES H.**
Current meter and weir discharges. 379.
**MILLS, HIRAM F.**
Flow of water in pipes. 203.
**MURPHY, EDWARD C.**
"Current Meter and Weir Discharge Comparisons." 370.
Flow of water in pipes. 197.
Hydraulic problems. 418.
**ROCKENBACH, S. D.**
"The Water-Works of Guantanamo, Cuba." 426.
**SAPH, A. V.**
Flow of water in pipes. 295.
**SCHODER, E. W.**
Flow of water in pipes. 295.
**SEDDON, JAMES A.**
Flow of water in pipes. 238.
**SHERMAN, CHARLES W.**
Flow of water in pipes. 223.
**SHERRERD, MORRIS R.**
Current meter and weir discharges. 381.
**SWEET, ELNATHAN.**
"Some Important Phases of Canal Navigation, Illustrated by Recent Experiments in Germany." 435.
**THRUPP, EDGAR C.**
Flow of water in pipes. 234.
**TUTTON, CHARLES H.**
"A Proposed Solution of Some Hydraulic Problems." 392.
Flow of water in pipes. 215.
**WHITE, W. M.**
Flow of water in pipes. 292.
**WILLIAMS, GARDNER S.**
"Experiments at Detroit, Mich., on the Effect of Curvature upon the Flow of Water in Pipes." 1.
**WILSON, W. E.**
Flow of water in pipes. 323.
**WISNER, GEORGE Y.**
Flow of water in pipes. 231.